Alabama and Mississippi to the Mississippi River, where it recurves northward to Tennessee, and from thence trends west-southwest to the Rio Grande Valley. A line showing the western limit of freezing weather is traced irregularly northwestward from southeastern Arizona to the Oregon coast, where it curves eastward over the valley of the Columbia River, and is continued northward between Port Angeles and Tatoosh Island, Wash.

As compared with the lines representing similar data for February, 1889, it is shown that for the current month the limit of freezing weather was about ten degrees farther north on the Atlantic coast, and from five to ten degrees farther north in the Gulf states. On the Pacific coast there was a general and marked advance eastward of the limit of freezing weather, the coast of western Oregon being the only region where the temperature fell below 32°.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for March, 1889, as determined from the reports of nearly 2,000 stations, is exhibited on chart iii. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for each Signal Service station. The figures opposite the names of the geographical districts in the columns for precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

The greatest precipitation in March, 1889, occurred at interior stations in California north of the thirty-eighth parallel, where it amounted to more than ten inches. No monthly rainfalls to exceed eight inches were reported east of the Pacific slope. Over the eastern portion of the country the greatest amount of precipitation was noted at stations on the Virginia coast, in eastern Maryland, southern Delaware, southern New Jersey, the southern extremity of Florida, in central and northeastern Arkansas, and southern Mississippi, where it amounted to more than six inches. Over a large portion of the upper lake region and the upper Mississippi and Missouri valleys the monthly precipitation was less than one-half inch, while at stations on the southeastern and middle slopes and the western part of the middle plateau region of the Rocky Mountains the amount varied from .00 to one-half inch.

The precipitation was above the normal in California south of the fortieth parallel, in Montana and northeastern Minnesota, southwestern Missouri, southern Kansas, Arkansas, and thence southwestward to the Gulf coast and westward to the Pacific, except within an area extending over parts of western Texas, southern New Mexico, and southeast Arizona, over southern Florida, along the Atlantic coast from Atlantic City, N. J., to the lower South Carolina coast, except at Hatteras and Kitty Hawk, N. C., and over a part of the northern plateau region. The greatest departures above the normal occurred over the southern extremity of Florida, where they amounted to more than six inches, and along the west-central coast of California, and in central Arkansas, where they were more than four inches. The precipitation was generally below the normal from New England westward to the Pacific, and from the Lake region southward to the Gulf of Mexico, the greatest departures below the normal being reported in northwestern Georgia, southwestern Alabama, and northwestern Oregon, where they exceeded four inches.

In the several districts where the precipitation was in excess the percentages above the normal were about as follows: middle Atlantic states, 5 per cent.; Florida, 93 per cent.; Rio Grande Valley, 117 per cent.; west Gulf states, 20 per cent.; middle slope, 50 per cent.; southern slope, 4 per cent.; southern plateau, 9 per cent.; northern plateau, 30 per cent.; middle Pacific coast, 137 per cent.; southern Pacific coast, 107 per cent. In the districts where the precipitation was deficient the percentages of the normal were about as follows: New England, 60 per cent.; south Atlantic states, 85 per cent.; east Gulf states, 66 per cent.; Ohio valley and Tennessee, 50 per cent.; lower lake region, 60 per cent.; upper lake region, 40 per cent.; extreme northwest and upper Mississippi valley, 50 per cent.; Missouri Valley, 97 per cent.; northern slope, 75 per cent.; middle plateau and north Pacific coast, 70 per cent.

Chart iv exhibits the normal distribution of precipitation for March as determined from eighteen years' observations. This chart shows that the heaviest precipitation for the month occurs in the extreme northwest part of Washington, where it commonly exceeds ten inches. It averages eight inches, or more, in parts of western Washington and Oregon, northeastern and southwestern California, and northern Mississippi. The greatest average amount of precipitation in the Rocky Mountain regions is shown in limited areas located in north-central Colorado and south-central Utah, where it amounts to four inches, or more. Over a considerable portion of the Rocky Mountain districts the precipitation for March falls below one-half inch.

DEVIATIONS FROM AVERAGE PRECIPITATION.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for a series of years; (2) the length of record during which the observations have been taken, and from which the average has been computed; (3) the total precipitation for March, 1889; (4) the departure of the current month from the average; (5) and the extreme monthly precipitation for March during the period of observation and the years of occurrence:

State and station.	County.	(1) Average for the month of March.	(2) Length of record.	(3) Total for March, 1889.	(4) Departure from average.	(5) Extreme monthly precipitation for March.			
						Greatest.		Least.	
						Am't.	Year.	Am't.	Year.
Arkansas.		*Inches*	*Years*	*Inches*	*Inches.*	*Inches*		*Inches.*	
Lead Hill	Boone	3.75	7	3.61	—0.14	4.87	1886	2.84	1887
California.									
Sacramento	Sacramento	2.87	39	7.20	+4.33	10.00	1850	0.09	1885
Colorado.									
Fort Lyon	Bent	0.41	15	0.64	+0.23	1.87	1868	0.00	1879
Connecticut.									
Middletown	Middlesex	4.64	27	2.55	—2.09	9.49	1876	1.12	1874
Florida.									
Merritt's Island	Brevard	2.92	11	1.03	—1.89	7.92	1878	0.76	1882
Georgia.									
Forsyth	Monroe	7.51	15	2.48	—5.03	12.87	1875	1.37	1878
Illinois.									
Peoria	Peoria	2.57	34	1.50	—1.07	5.82	1859	0.24	1885
Riley	McHenry	2.67	38	1.56	—1.11	7.23	1876	0.29	1885
Indiana.									
Logansport	Cass	3.13	14	1.51	—1.62	6.89	1861	0.95	1856
Vevay	Switzerland	3.89	24	0.85	—3.04	6.30	1882	0.85	1889
Iowa.									
Cresco	Howard	1.91	17	0.22	—1.69	4.55	1888	0.22	1889
Monticello	Jones	2.59	34	0.15	—2.44	6.54	1877	0.07	1869
Logan	Harrison	2.12	21	0.69	—1.43	4.50	1876	0.30	1885
Kansas.									
Lawrence	Douglas	2.29	21	2.30	+0.01	5.47	1888	0.37	1879
Wellington	Sumner	1.24	10	2.97	+1.73	2.97	1889	0.00	1879
Louisiana.									
Grand Coteau	St. Landry	5.92	6	3.69	—2.23	10.20	1884	2.28	1887
Maine.									
Cornish	York	4.13	32	3.17	—0.96	9.63	1859	1.42	1874
Maryland.									
Cumberland	Allegany	2.71	17	3.52	+0.81	5.14	1884	0.50	1872
Massachusetts.									
Amherst	Hampshire	3.46	53	1.02	—2.44	7.14	1876	0.89	1858
Newburyport	Essex	3.96	10	3.20	—0.76	6.83	1881	0.96	1885
Somerset	Bristol	4.83	16	2.74	—2.09	9.43	1877	1.14	1885
Michigan.									
Kalamazoo	Kalamazoo	2.57	13	1.84	—0.73	7.33	1877	0.42	1883
Thornville	Lapeer	2.56	12	0.71	—1.85	4.67	1877	0.71	1889
Minnesota.									
Minneapolis	Hennepin	1.86	23	1.07	—0.79	9.00	1868	0.32	1883
Montana.									
Fort Shaw	Lewis&Clarke	0.46	18	0.34	—0.12	1.05	1883	0.04	1873

Deviations from average precipitation—Continued.

State and station.	County.	(1) Average for the month of March.	(2) Length of record.	(3) Total for March, 1889.	(4) Departure from average.	(5) Extreme monthly precipitation for March.			
						Greatest.		Least.	
						Am't.	Year.	Am't.	Year.
New Hampshire.		*Inches*	*Years*	*Inches*	*Inches.*	*Inches*		*Inches.*	
Hanover	Grafton	2.32	50	2.65	+0.33	5.25	1883	0.25	1866
New Jersey.									
Moorestown	Burlington	3.48	26	3.85	+0.37	5.78	1876	1.08	1885
South Orange	Essex	3.69	17	3.88	+0.19	8.20	1888	0.81	1885
New York.									
Cooperstown	Otsego	2.88	35	1.76	−1.12	5.29	1871	0.55	1885
Palermo	Oswego	2.89	35	2.59	−0.30	7.00	1859	0.68	1885
North Carolina.									
Lenoir	Caldwell	4.22	17	1.40	−2.82	10.20	1875	0.50	1879
Ohio.									
N. Lewisburgh	Champaign	3.20	17	0.75	−2.45	5.90	1888	0.75	1889
Wauseon	Fulton	2.76	17	2.96	+0.20	6.52	1876	0.62	1885
Oregon.									
Albany	Linn	4.46	11	2.28	−2.18	11.71	1866	0.81	1885
Eola	Polk	4.94	20	2.84	−2.10	10.66	1879	0.55	1885
Pennsylvania.									
Dyberry	Wayne	2.98	22	1.74	−1.24	5.78	1871	1.03	1885
Grampian Hills	Clearfield	3.93	18	3.12	−0.81	6.89	1875	1.34	1885
Wellsborough	Tioga	5.28	9	3.19	−2.09	10.68	1884	0.66	1887
South Carolina.									
Statesburgh	Sumter	3.91	8	3.27	−0.64	5.90	1888	0.97	1887
Tennessee.									
Austin	Wilson	5.59	18	2.98	−2.61	12.59	1875	1.93	1861
Milan	Gibson	3.96	6	4.41	+0.45	5.28	1888	1.94	1885
Texas.									
Fort Concho	Tom Green	0.80	15	1.15	+0.35	3.16	1883	0.00	1887
New Ulm	Austin	4.92	16	4.13	−0.79	13.13	1883	1.27	1887
Vermont.									
Strafford	Orange	3.64	16	4.30	+0.66	7.10	1876	1.55	1878
Virginia.									
Bird's Nest	Northampton	4.83	20	7.20	+2.37	8.75	1884	1.70	1873
Wytheville	Wythe	3.61	24	1.37	−2.24	8.04	1884	1.37	1889
Wisconsin.									
Madison	Dane	2.70	21	1.48	−1.22	7.90	1869	0.32	1883
Washington.									
Fort Townsend	Jefferson	1.88	14	1.42	−0.46	4.32	1876	0.11	1884

Table of excessive precipitation, March, 1889.

State and station.	Monthly rainfall to inches or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
California.	*Inches.*	*Inches.*		*Inches*	*h. m.*	
Anderson	12.00					
Boulder Creek	19.58					
Calistoga	10.67					
Colegrove		2.59	13			
Colfax	13.90					
Delta	37.52					
Dunsmuir	21.39					
El Nerano	10.69					
Felton	13.48					
Georgetown	12.29	3.10	13			
Do		3.00	14			
Glen Allen	16.00					
Laurel	17.77					
Los Angeles		2.53	16			
Redding	10.78					
Sacramento				2.00	2 00	13
San Francisco		3.08	12-13			
Santa Barbara		2.90	13			
Tehama	10.41					
Delaware.						
Viola		5.01	3-5			
Florida.						
Fort Barrancas		4.00	1-2			
Key West		2.79	12-13			
Pensacola		3.02	2-3			
Georgia.						
Diamond		3.25	2			
Louisiana.						
Plaquemine		2.79	23			
Port Eads		2.50	3			
Maryland.						
Baltimore		2.71	3-4			
McDonogh		3.01	4			
Missouri.						
Macon		2.80	3			
Springfield		2.86	17-18			
New York.						
Friendship		3.00	2			
South Carolina.						
Charleston		3.14	13-14			
Trial		2.68	15			
Texas.						
Galveston				1.30	0 35	1
Howe		2.50	31			
Luling		3.04	27			
Virginia.						
Norfolk		2.50	14-15			
Smithfield		4.22	19-20			

The above table shows that monthly precipitation to equal or exceed ten inches was not reported, except in California, where this amount was exceeded at thirteen stations located in the west-central and north-central portions of the state, the greatest fall, 37.52 inches, being noted at Delta.

The greatest amount of precipitation reported in twenty-four hours was 5.01 inches, at Viola, Del. Of the twenty-four instances in which precipitation to equal or exceed 2.50 inches in twenty-four hours was reported, six were noted in California, three in Florida and Texas, two in Louisiana, Maryland, Missouri, South Carolina, and Virginia, and one in Delaware, Georgia, and New York.

The greatest amount of precipitation reported in one hour or less occurred at Galveston, Tex., on the 1st, when 1.30 of an inch fell in thirty-five minutes, giving a rate per hour of 2.23 inches. The only other instance of an excessive rainfall of short duration was reported at Sacramento, Cal., where 2.00 inches fell in two hours on the 13th.

EXCESSIVE RAINFALLS OF TEN MINUTES, OR LESS.

The following record of heavy rainfalls of ten minutes, or less duration, as recorded at the Meteorological Observatory, New York City, has been furnished by Mr. Rudolph Hering, Consulting Engineer, Department of Public Works, Office of Engineer in Charge of Sewers, New York City:

Date.	Maximum fall.	Time.	Date.	Maximum fall.	Time.
	Inch.	*Min.*		*Inch.*	*Min.*
July 27, 1880	0.50	10	August 5, 1884	0.45	5
May 22, 1881	1.15	10	June 5, 1885	0.30	3
June 15, 1882	0.35	10	November 18, 1886	0.25	2
June 29, 1882	0.50	10	August 18, 1887	0.43	5
September 21, 1882	0.45	8	July 19, 1888	0.39	10
June 6, 1883	0.44	5	August 4, 1888	0.59	10
July 12, 1884	0.40	10	August 21, 1888	0.40	10

In a letter to the Chief Signal Officer, forwarding the above record, Mr. Hering remarks as follows:

"As you request suggestions which bear upon the observations and data of the Signal Service, pertinent to engineering problems, I take the liberty of making the following one: A very important problem is the proper size for sewers in a densely built up city. They must be large enough to carry off the water from rains of great intensity, otherwise there will be flooding of cellars, causing sometimes great damage. My observations have led me to conclude that a ten-minute period would be the proper time in which to state the heaviest actual rainfall. Inside of such time it is supposed that the water has reached most of the sewers. To designate the maximum fall as formerly in inches per hour leads often to erroneous conclusions, and your late method of giving shorter periods has been very useful. Therefore the greatest usefulness of your valuable observations can be accomplished for the above purpose, which you readily see represents a considerable capital, by stating the heaviest falls in ten minutes, or less time. This is practicable where automatic gauges are used, and I am much pleased to see that you have put a number of them into use over the country. The inclosed data, showing maximum intensity of rain for short periods, is such as is necessary to consider in the construction of branch sewers."

SNOW.

Snow was reported on the greatest number of dates, twenty-one, in New York; on nineteen in Michigan and Ohio; on eighteen in Pennsylvania; on seventeen in Vermont; on sixteen in Minnesota; on from ten to fifteen, inclusive, in Colorado, Connecticut, Dakota, Maine, Massachusetts, New Hampshire, New Jersey, New Mexico, West Virginia, Wisconsin, and Wyoming; on from five to nine, inclusive, in Arizona, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Montana, Nebraska, Oregon, and Rhode Island; and on from one to four, inclusive, in California, District of Columbia, Indian Territory, Missouri, Nevada, Tennessee, Texas, Utah, Virginia, and

Delaware. It was noted in the greatest number of states and territories, twenty-eight, on the 9th; in twenty-six on the 8th; in nineteen on the 28th; in eighteen on the 29th; in seventeen on the 7th, 10th, and 20th; in sixteen on the 21st; in from ten to fifteen, inclusive, on the 6th, 15th, 27th, 30th, and 31st; in from five to nine, inclusive, on the 1st to 5th, 11th to 14th, 16th to 19th, 22d, 23d, and 26th. On the 24th and 25th no snow was reported.

The southern limit of snow is represented by a line traced from Norfolk, Va., westward to Wichita, Kans., and thence southward into Texas to about latitude N. 33°, whence it trends westward to south-central Arizona, from which locality it is continued northwestward into California east of Sacramento. To the northward of the fortieth parallel the line indicating the snow limit over the western part of the country curves southeastward over the plateau region of the Rocky Mountains forming an elongated area, within which no snow was reported, extending from Washington and the northeastern part of Oregon to western Colorado.

The heaviest snowfall for the month, east of the one hundred and twentieth meridian, was reported within an area extending from central Vermont westward into north-central New York, where it exceeded twenty-four inches, the greatest depth, thirty-six inches, being noted at Strafford, Vt. A monthly snowfall of twenty-four inches was also reported at Sault de Ste. Marie, Mich. At Summit, Cisco, and Emigrant Gap, Cal., a depth of 95.5, 94.0, and 29.0 inches, respectively, was reported. The snowfall exceeded twelve inches over the northern half of New Hampshire and Vermont; generally over New York, north of the forty-third parallel; within a limited area in east-central Pennsylvania, and at stations in extreme northern parts of Michigan.

DEPTH OF SNOW REMAINING ON GROUND ON 15TH AND AT CLOSE OF MONTH.

Except within two areas, one embracing a greater part of New York, Vermont, and New Hampshire, west-central and southeastern Maine, and the other extending over central Minnesota, and at a station in west-central Nevada, no snow was reported on the ground on the 15th. The greatest depth, twenty-four inches, was noted at Palermo, N. Y. In Minnesota the greatest depth was reported in the vicinity of Lake Winnibigoshish, where it varied from five to eight inches. At Wellington, Nev., a depth of five inches was noted.

Chart v shows that at the close of the month snow was reported on the ground over a greater part of New England, New York, eastern and central Pennsylvania, northern New Jersey, and the Lake region, and that the greatest depth was noted at stations in north-central New Hampshire and Vermont, and central New York, where twenty inches or more were reported. For the extreme northern part of the upper peninsula of Michigan a depth of twelve inches is indicated.

MONTHLY SNOWFALLS (inches and tenths) MARCH, 1889.

Below are given all monthly snowfalls of five inches, or more, and in states and territories where the maximum depth was below that amount, the station reporting the greatest is given: *Arizona.*—Williams, 5.5. *California.*—Summit, 95.5; Cisco, 94; Emigrant Gap, 29; Towles, 6. *Colorado.*—Fort Lewis, 9.5; Leadville, 9; Georgetown, 8.5; Idaho Springs, 7.3; Breckenridge and Grand Lake, 7; Coulter and Palmer Lake, 6. *Connecticut.*—New Hartford, 5.4; Mansfield, 5. *Dakota.*—Webster, 6.2; Fort Meade, 5.6. *Delaware.*—Newark, trace. *District of Columbia.*—Washington City, 0.5. *Illinois.*—Winnebago, 8.5; Lake Forest, 8; Belvidere, 7.5; Rockford, 7; Lanark, 6.8; Sycamore, 6.5; Riley, 6.2; Aurora, 5.7; Chicago, 5.1; Mount Morris and Rock Island Arsenal, 5. *Indiana.*—Angola, 2. *Indian Territory.*—Fort Sill, 0.4. *Iowa.*—Clinton, 4.5. *Kansas.*—Junction City, 3.8. *Kentucky.*—Mount Sterling, 2.5. *Maine.*—Mayfield, 14; Bar Harbor, 6; Portland, 5.4. *Maryland.*—Barren Creek Springs, 1.8. *Massachusetts.*—Williamstown, 11.3; Royalston, 6.2. *Michigan.*—Sault de Ste. Marie, 24; Calumet, 14; Pulaski, 9; Marquette, 8.4; Jeddo and Lansing, 8; Port Huron, 7.7; Berlin, 7.4; Hastings, 7.3; Atlantic, Flint, Hanover, Ovid, and Pontiac, 7; Saint John's and Thornville, 6.5; May and Traverse City, 6; Lothrop, 5.7; Ypsilanti and Fort Wayne, 5.2; Eden, Fremont, and Washington, 5. *Minnesota.*—Pokegama Falls, 9.2; Farmington, 6; Duluth, 5.9; Lake Winnibigoshish, 5.8; Leech Lake, 5.7. *Missouri.*—Sedalia, 4. *Montana.*—Fort Maginnis *a* and Sheldon, 8; Fort Maginnis *b*, 7.2; Fort Assinaboine, 6.1; Virginia City, 6; Helena, 5. *Nebraska.*—Hay Springs, 3.7. *Nevada.*—Wellington, 12; Pioche and Tuscarora, 6.5. *New Hampshire.*—Berlin Mills, 16.5; North Sutton, 9; Nashua, 7.5; North Chesterfield, 7; Manchester, 6.4; Antrim, 6. *New Jersey.*—Atlantic City, 7.3. *New Mexico.*—Santa Fé, 5.6. *New York.*—Saranac Lake, 26; Number Four, 24; Palermo, 23; Hess Road Station, 22.4; Lyons, 20; Utica, 17.7; Rochester, 17.5; Barnes' Corners, 16; Potsdam, 15.5; Oswego, 14.4; Somerset, 13.5; Fort Porter, 13.2; Ilion, 12.6; Constableville, 12; New York City, 11; Salem, 10,8; Lowville, 10.5; Fort Wadsworth, 10.2; Le Roy, 9.1; Fort Niagara and Ithaca, 9; Buffalo, 8.9; North Hammond, 8.7; Canton, 8.6; Friendship and Humphrey, 8.5; David's Island, 8.3; Fort Schuyler and Nineveh, 8; Angelica, 7; Perry City and Tannersville, 6.5; Cooperstown, 5.8; Queensbury and Wedgewood, 5.2; Geneva and South Canisteo, 5. *Ohio.*—Cleveland, 6.1. *Oregon.*—Siskiyou, 5. *Pennsylvania.*—Blooming Grove, 13; Charlesville, 11.5; Eagle's Mere, 9.6; Pleasant Mount, 9.5; Germantown and Girardville, 8; Somerset, 7.8; Uniontown, 7.5; Drifton, 7.2; Grampian Hills, 7; Salem Corners, 6.3; Allegheny Arsenal and Le Roy, 6.1; Rimersburgh, 6; Dyberry, 5.5. *Rhode Island.*—Woonsocket, 6. *Texas.*—Fort Elliott, 3.9. *Utah.*—Fort Douglas, 2. *Vermont.*—Strafford, 36; East Berkshire, 25.9; Lunenburgh and Burlington, 17.5; Northfield, 14; Saint Johnsbury, 7. *Virginia.*—Bolar, 1. *West Virginia.*—Middlebrook, 22.5; Hartmontsville, 9; Rockport, 7. *Wisconsin.*—Summit Lake, 8.5; Delavan, 8.2; Fond du Lac, 6; Manitowoc, 5.2. *Wyoming.*—Camp Sheridan, 1.8.

HAIL.

Descriptions of the more severe hail-storms of the month are given under "Local storms." Hail was reported during the month as follows:

4th, Pa. 7th, Ind., Iowa, N. H. 8th, Cal., Nev., Ohio, Oregon. 9th, Wash. 10th, Ariz. 13th, Cal., N. H., Oregon. 14th, Ariz., Cal. 15th, Ariz., Ark., Cal., Iowa, Mo., N. J., N. Y. 16th, Cal., La., Tenn. 17th, Conn., Iowa, Mass., N. H., Ohio. 18th, Ill., Ky., Mo., N. H., N. Y., Oregon, Tenn. 19th, Ky., N. C., S. C., Tenn. 20th, Ind. T., Mass., Oregon, R. I. 21st, Ariz., Mass., N. Y., R. I., Tex. 22d, Colo., Tex. 23d, Oregon. 24th, Ga., Miss., S. C. 25th, Minn. 26th, S. C. 27th, N. Y., Tex. 28th, Iowa, Md., Mass., N. H., N. J. 30th, Dak., Ill., Iowa, Kans., Mass., Mich., Mo. 31st, Ill., Iowa, Md., Mass., Mo., N. J., N. Y., Ohio, Pa., Tex.

SLEET.

Sleet was reported during March as follows: 1st, Ind., Ohio, Minn. 2d, Miss., Ohio. 4th, Mass. 5th, Ill., Iowa, Ohio, W. Va. 7th, Iowa, Ohio. 8th, Ind. 9th, Kans. 10th, Tex. 14th, Dak., Mich., Minn., Nebr. 15th, Dak., Iowa, Mich., Minn., Nebr., Nev. 16th, Conn., Minn. 17th, Me., Mass., Vt. 19th, Utah. 20th, Conn., N. Y. 21st, Conn., N. Y., Ohio, R. I. 26th, Wis. 27th, Ky. 28th, Conn. 29th, Mich., N. Y., Ohio. 30th, Dak., Ill., Iowa, Mich., Minn. 31st, Conn., Dak., Ind., Mass., Mich., N. J., N. Y., Ohio, Pa.

WINDS.

The prevailing winds during March, 1889, are shown on chart i by arrows flying with the wind. In New England, the south Atlantic states, Florida, the upper Mississippi valley, and the northeastern, middle, and southeastern slopes of the